Service Pool Definitions

The **Public Service Pool** would consist of all of the existing private land mobile radio services encompassed within the current Part 90, exclusive of the six services designated as Public Safety and the Special Emergency Radio Service. The Public Service Pool would include the nine Industrial Radio Services (Power, Petroleum, Forest Products, Film and Video Production, Relay Press, Special Industrial, Business, Manufacturers and Telephone Maintenance), the four Land Transportation Radio Services (Motor Carrier, Railroad, Taxicab and Automobile Emergency), and the Radiolocation Service.

The **Public Safety Pool** would consist of the six existing Public Safety Radio Services (Local Government, Police, Fire, Highway Maintenance, Forestry-Conservation and Emergency Medical) and the Special Emergency Radio Service.

Discussion of the Two Pool Proposal

The present regulatory system has served the land mobile radio industry well for decades. However, the need for 20 radio services has passed its useful life cycle.

Implementation of trunking technologies and advanced digital techniques requires the introduction of protected service areas.[1] With protected service areas, and the introduction of trunking technologies and digital techniques, it becomes impossible, as a practical matter, to distinguish between different types of communications. These advanced technologies also make the distinction irrelevant. The only considerations are sufficient co-channel and adjacent-channel separation. In such a licensing

[1] As discussed at greater length in the Comments of the Land Mobile Communications Council responding to the Further Notice of Proposed Rule Making in this proceeding filed this same date, the implementation of "protected service areas" forms a key element of the future direction envisioned for the private land mobile radio frequency bands below 800 MHz.

environment, the differentiation between a taxicab user and a licensee engaged in highway construction is unimportant. Coordination must provide sufficient geographic separation between the systems, but the amount of use or whether the mode is base/mobile- or repeater-oriented does not need to be considered when protected service areas are in place.

Under the LMCC's Transition Plan, incumbent licensees in the 150-174 MHz, 450-470 MHz and 470-512 MHz bands would have a significant head start in obtaining spectrum to assist in the introduction of new technologies.[2] The LMCC Transition Plan takes precautions to protect existing licensees of low-power offset operations. Given the safeguards in the LMCC Transition Plan, no one will be harmed. Existing community repeaters/private carriers in the spectrum below 512 MHz will have equal opportunity to gain access to the newly created channels.

Having reached the stage where it is both unnecessary and impossible to distinguish between different types of communications, there is no useful purpose to be served by retaining the existing radio service classifications.

The existing radio services are more a function of historical and technological developments than a reasoned and logical division

---

[2] See Comments of the Land Mobile Communications Council, filed this same date in response to the FCC's Further Notice of Proposed Rule Making in this proceeding.

of the radio spectrum. To illustrate, in 1937 the FCC created the Police, Forestry, Mobile Press and Motion Picture Radio Services. In 1949, the FCC implemented the Industrial Radio Services and the Land Transportation Radio Services. In 1958, while reducing channel spacing in the 450-470 MHz band, the Commission established the Manufacturers Radio Service, Telephone Maintenance Radio Service and Business Radio Services.

At each juncture, the Commission attempted to carve out sufficient spectrum to accommodate the developing requirements of society. The current structure of twenty private land mobile services is the result of these sporadic efforts. There is, however, no compelling explanation for the fact that the railroad industry has its own service classification, with its unique block of assigned frequencies, while the airline industry was integrated into the Business Radio Service and forced to compete with a multitude of industrial entities, both large and small, for access to frequencies.

If the FCC's intent is to create a higher grade of service and, eventually, greater spectrum capacity, then the Commission must not segregate services into arbitrary and needless classifications. The danger of perpetuating arbitrary distinctions can be seen in the current composition of the Business Radio Service and the Special Industrial Radio Service. These two services represent a number of major industries: mining, airlines,

telephone maintenance, banking, heavy construction, agribusiness, and chemical supply. In effect, the Business Radio Service and Special Industrial Radio Service represent a consolidation of industries that occurred long ago.

The industries represented in the Business Radio Service and the Special Industrial Radio Service are critical to rebuilding and maintaining the national infrastructure: highways, airfields, bridges. These two services are also the most congested of the thirteen private land mobile services encompassed within the "Public Service" designation.[3] Based on the FCC's 1993 licensing statistics, the Business Radio Service is the most intensively used service, with more than 21,000 transmitters per frequency. The Special Industrial Radio Service ranked second, with more than 8,000 transmitters per frequency. Several of the radio services had ratios of less than 3,000 transmitters per frequency. Consolidation into two pools represents the only way for the Commission to rectify these gross disparities and ensure that similar disparities do not develop in the future.

The Land Mobile Communications Council is working closely with Telecommunications Industries Association (TIA) Working Group 8.8 to develop frequency engineering standards based on the same theory

---

[3] The Commission has previously recognized that the Business Radio Service and the Special Industrial Radio Service are among the most heavily congested Part 90 services. See Notice of Inquiry, PR Docket No. 91-170, 6 FCC Rcd 4126 (1991), at para. 14.

and uniform algorithms. With the use of TIA's standards and proper management by the frequency management advisory committees, there will be no degradation in the quality of the radio service available to licensees included in the Public Service Pool.

Recognition of the Unique Requirements In Some Radio Services

The Joint Commenters recommend that the Commission keep the current "footnoted" frequencies for public service users. Of specific concern are the special use frequencies referenced above: slave locomotive control and fixed point-to-multipoint telemetry frequencies used by the railroads, ATU frequencies used by the airlines, oil spill cleanup frequencies used by petroleum companies and emergency response frequencies used by a variety of industries.

The Joint Commenters recognize users of such dedicated communications systems must have immediate access to a specified group of channels for the purposes indicated. Under the Joint Commenters' proposal, these special needs would be recognized and protected. By agreement of the frequency advisory committees and supported by corresponding rule provisions in Part 90, an appropriate number of frequencies would be set aside for these special requirements.

This two pool approach maximizes spectrum efficiencies. Since technology doesn't discriminate by the type of use, coordination

procedures can assign spectrum to the greatest number of users in the most efficient manner. At the same time, the unique operating requirements of, for example, long line (or ribbon) systems are recognized and protected, without discriminating against any type of user. Interservice sharing is eliminated, and coordinator competition can take place to the maximum extent possible.

There are a variety of public service systems that can be protected in this manner. Airline system communications, biomedical telemetry systems, slave locomotive systems, nuclear plants and telephone maintenance communications — each critical to safety of life and property — can not only continue under the two pool approach, but can actually have protections not currently provided by the Commission's Rules.

As discussed previously, the advent of digital and trunking technologies negates considerations of the differences in spectrum use by multiple licensees. The only considerations are sufficient co-channel- and adjacent-channel geographic separation. Further, to the extent that spectrum is shared, PCIA and ITA have shown for years that it is possible to coordinate disparate users, all eligible for the frequencies in the pool, and minimize interference. Users of Business and Special Industrial Radio spectrum, unfortunately the most crowded services, include oil companies, airlines, taxicab companies, utilities, manufacturers and delivery companies, among others.

Administrative and Management Issues

The establishment of two pools would benefit the FCC directly. It would simplify the frequency coordinating process and eliminate the need for special measures such as interservice sharing. The establishment of two service pools would introduce direct competition between the existing public service frequency advisory committees. Competition in the frequency coordination process would minimize the need for the FCC to use its valuable resources to monitor and evaluate the performance of the certified frequency coordinating committees.

Further, consolidation of the existing radio services into two pools will not directly undermine the membership basis of certified frequency coordinators. Ingrained loyalties to individual user associations will continue. Customers will continue to support those user associations that provide the best level and most useful range of services at reasonable prices.

Coordination Procedures Must Be Established

After consolidation, coordinators should not be required to review **every** application that gets filed, which has already been coordinated by another frequency advisory committee. The need to review every application in a consolidated pool would be devastating for most frequency advisory committees.

Procedures should be created to prevent applications from needing to be reviewed by more than one coordinator. Through the standardization of coordination procedures (which can recognize different coordination parameters for various types of users), the need for review by multiple coordinators is unnecessary. While this process does require the establishment of coordination procedures by the Commission and frequency advisory committees (any consolidation will require such procedures) — PCIA, ITA and APCO have already instituted similar notification procedures for their staffs, and the procedures do work.

The Commission must ensure that frequency coordinating committees need not be concerned with the work product of other coordinating committees in the same pool. Fortunately, the Commission's Rules already provide a remedy for this situation. Since coordinations are only recommendations, the Commission is ultimately responsible for the grant of the license. Objecting parties may oppose the grant of the application, pursuant to Section 1.41 of the Commission's Rules. A pattern of poor coordinations by a frequency advisory committee would be grounds for decertification of that committee.[4] While mutual coordination procedures such as those discussed above should minimize instances where objections are raised by other frequency advisory committees,

---

[4]Report and Order, PR Docket No. 83-737, FCC 86-143, released April 13, 1986 at para. 127.

the Commission must remain vigilant in enforcing these rules when problems are brought to the Commission's attention.

Establishment of proper frequency management procedures, as discussed above, will "raise the water" of frequency recommendations to ensure that no frequency advisory committee is performing poorly. Once the procedures are established, there will be competition among representative organizations on a level playing field, and applicants will use the coordinator who gives the applicant the best value for its money, based upon the applicant's evaluation of the quality of the work performed, the speed of service and the cost of coordination.

Real-Time Coordination Exchange Is Vital To Consolidation

Consolidation of radio services is only feasible where there is real-time data exchange among frequency advisory committees. If real-time data exchange is not mandated, many of the problems that led to the creation of a single coordinator system in the 1980s will be revisited.

There must be real-time data exchange. Otherwise, in the absence through state-of-the-art electronic transfer mechanisms, neither the Commission, nor the applicants, nor the frequency advisory committees will be able to ensure that applications, once submitted, are not in conflict with other applications being

submitted at the same time. Therefore, all certified frequency coordinators must have the capability of electronically transmitting and receiving frequency notifications.

However, a national coordinators' database is neither possible nor desirable. There cannot be truly competitive coordination with a national database because the database is a frequency advisory committee's major asset. A number of coordinating committees have expended millions of dollars creating what each believes is a premier database tool. While it may be desirable from a business standpoint in some situations for multiple coordinators to use the same database, such decisions should be left to the marketplace.

The primary reason for establishing a national database is so that the various committees are coordinating using the same information. With regard to systems already licensed, the Commission's database must remain the sole authority to resolve disputes. However, with regard to pending coordinations, electronic transfer of all data through some form of electronic data exchange should be a requirement of all coordinating committees.[5] In this manner, all databases may remain current.

---

[5]If EDI notification is required and standard coordination procedures adopted, the Joint Commenters believe that notification is sufficient and concurrence from other coordinating committees should not be necessary.

There is no compelling reason for, nor will the industry adhere to, a single universal application/licensing database. The coordinators' individual databases are designed to accommodate the unique marketing and management requirements of the different user associations. With inter-coordinator electronic notification, there will be no need for a common database. Utilizing a national database is not prudent, as it eliminates the ability of a frequency advisory committee to customize the information available, depending on the needs of the customers. For example, PCIA's database includes an extensive history function. Using this function, coordinators may make notes or comments about conversations with the applicant or reasons why a coordination was or was not performed. This information is vital in resolving disputes which may arise years after the system is licensed.

Designation Of Low-Power Channels

If the Commission adopts the two pool approach, coordinators may jointly decide how many frequencies are required for low-power offset operations (as well as how many frequencies are necessary for emergency response).

The Joint Commenters concur that the transition plan presented in the LMCC's Further Notice comments represents the best means by which the Commission may address the needs of current secondary low-power offset users. Therefore, consistent with LMCC's plan, it

is proposed that:

1. Licensees would have a specific period of time to declare whether they wish to convert to primary status;

2. If licensees do not declare their intent to convert to primary status, they will have to modify their licenses and modify their authorizations to designate the newly defined low-power pool frequencies;

3. Based on the declarations by licensees, the frequency coordinators would identify how many and what specific frequencies should be designated for low-power operations;

4. There should be a specific deadline established to govern cases in which the licensees of existing secondary, low-power systems choose not to convert to primary status. On this deadline, those low-power systems will be subject to having primary, full-power systems licensed on the same channel and on adjacent channels;

5. The Joint Commenters recommend that the Commission adopt the following dates for secondary conversion:

    (1) September 1, 1996: Deadline for low-power licensees to declare their intent to convert to primary status;

    (2) March 1, 1997: Date by which the frequency coordinators will have to: (a) ascertain how many of the current offset frequencies should be designated for primary operations; (b) identify which specific frequencies will be made available for primary operations; and (c) determine which frequencies will be designated for the low-power pool;

    (3) March 1, 1998: Date on which existing low-power, secondary systems will be subject to interference from full-power, primary-status systems. Licensees of secondary systems will be on notice that, as of this date, they will have to convert to designated low-power pool frequencies or they will be at risk of interference from systems licensed for full-power operations on a primary basis.

Conclusion

The Commission has already stated its decision to consolidate the radio services and the reasoning behind it in the Refarming *Report and Order*. The Joint Commenters firmly believe that the creation of two pools — Public Service and Public Safety — will "ensure more efficient distribution of the additional channels created as a result of the transition to narrowband technology." The Joint Commenters also agree with the Commission that advances in technology and time have combined to make the present radio service system meaningless.

Consolidating the 13 Industrial and Land Transportation Services into a single "Public Service" pool is a policy action that will stand the test of time. Any other delineation between radio services would be merely arbitrary and would quickly become out of date much like the current 20-radio service system.

Frequency set-sides within the Public Service Pool will ensure that vital, safety-related communications will not be adversely affected by the radio service consolidation.

The Joint Commenters appreciate the chance to advise the Commission on this issue, which so greatly affects our memberships and our services to private radio licensees.

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
Replacement of Part 90 by Part 88 to Revise the Private Land Mobile Radio Services and Modify the Policies Governing Them	)	PR Docket No. 92-235
	)	
and	)	
	)	
Examination of Exclusivity and Frequency Assignment Policies of the Private Land Mobile Radio Services	)	

To: The Commission

RECEIVED
NOV 20 1995
FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF SECRETARY

COMMENTS OF THE LAND MOBILE COMMUNICATIONS COUNCIL

LAND MOBILE COMMUNICATIONS COUNCIL
David Flinkstrom, President
Mark E. Crosby, Acting Secretary/
Treasurer
1110 N. Glebe Road
Suite 500
Arlington, VA 22201
(703) 528-5115

Dated: November 20, 1995

S U M M A R Y

The LMCC believes it is imperative that the cooperative spirit that has characterized the developments to date in the refarming proceeding continue. LMCC agrees with the Commission that encouraging more efficient and effective spectrum use remains the central focus of the refarming proceeding.

There are three significant steps that LMCC believes must be completed if the Commission and the industry are to achieve success in its refarming effort. First, uniform technical standards must be developed to govern the coordination of new systems. Second, measures must be implemented to allow the licensees of existing low power offset operations to adequately protect their communications systems. Third, concrete deadlines must be established to assist the transition to more efficient technologies.

With respect to the deadlines for the transition to more efficient technologies, LMCC recommends that, except with respect to incumbent offset operations, all applications filed on or after August 1, 1996 for new systems would have to declare the use of 12.5 kHz or equivalent spectrum efficiency. Second, effective August 1, 2005, for all markets designated as frequency-congested by the frequency advisory committees, secondary status would be conferred on licensees who do not convert to 12.5 kHz channelization or equivalent spectrum

efficiency.

LMCC also advocates that the Commission adopt the concept of "Protected Service Areas" to allow licensees to develop interference-free service areas. Further, LMCC believes it is necessary to adopt provisions that would allow primary channel incumbents to claim the adjacent 12.5 kHz offset channels or to retain their current claim to 25 kHz bandwidth, if they convert to 12.5 kHz operation or a spectral equivalent technology employing 25 kHz bandwidth.

LMCC strongly opposes the use of spectrum auctions as a measure to induce users to employ more efficient technologies. Further, under no circumstances, should the FCC adopt a competitive bidding system that pits users of private internal systems against commercial entities. LMCC is also opposed to the suggestion that the licensees of single-user private wireless systems might be permitted to resell excess capacity on their systems.

Regardless of the economic incentives that might be applied, the Commission must also be careful to address and resolve the residual issues, identified above, relating to the deployment of new technologies.

Table of Contents

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
Replacement of Part 90 by Part 88 to Revise the Private Land Mobile Radio Services and Modify the Policies Governing Them	)	PR Docket No. 92-235
	)	
and	)	
	)	
Examination of Exclusivity and Frequency Assignment Policies of the Private Land Mobile Radio Services	)	

To: The Commission

COMMENTS
OF THE
LAND MOBILE COMMUNICATIONS COUNCIL

The Land Mobile Communication Council ("LMCC") respectfully submits the following Comments responsive to the issues raised by the Federal Communications Commission in the Further Notice portion of the Report and Order and Further Notice of Proposed Rule Making released in the above-referenced proceeding on June 23, 1995.[1]

I. PRELIMINARY STATEMENT

1. LMCC is a non-profit association of organizations representing users of land mobile radio and providers of land

[1] Report and Order and Further Notice of Proposed Rule Making (FCC 95-255), adopted June 15, 1995. A summary of this decision appeared in the Federal Register dated July 19, 1995. (See 60 Fed. Reg. 37,148.)

mobile services and equipment. LMCC acts on behalf of the vast majority of public safety, business, industrial, private, common carrier, and land transportation radio users, as well as a diversity of land mobile service providers and equipment manufacturers.

2. LMCC's membership includes a variety of national associations representing users of the radio spectrum for both private and common carrier purposes. Specifically, LMCC's membership includes the following organizations[2]:

American Association of State Highway and Transportation Officials (AASHTO)
American Automobile Association (AAA)
American Mobile Telecommunications Association (AMTA)
American Petroleum Institute (API)
American Trucking Associations, Inc. (ATA)
Association of American Railroads (AAR)
Association of Public-Safety Communications Officials-International, Inc. (APCO)
Cellular Telecommunications Industry Association (CTIA)
Forestry-Conservation Communications Association (FCCA)
Industrial Telecommunications Association, Inc. (ITA)
International Association of Fire Chiefs (IAFC)
International Association of Fish and Wildlife Agencies (IAFWA)
International Municipal Signal Association (IMSA)
International Taxicab and Livery Association (ITLA)
Manufacturers Radio Frequency Advisory Committee, Inc. (MRFAC)
National Association of State Foresters (NASF)
Personal Communications Industry Association (PCIA)
Telecommunications Industry Association (TIA)
UTC--The Telecommunications Association

---

[2] It is anticipated that individual members of LMCC will file their own comments in which they elaborate on their specific positions and explain any differences from the approaches recommended in these Comments.

II. BACKGROUND

rt and Order implements the Commission's broad
ge more efficient use of private land mobile
ectrum. To that end, the Report and Order
nd channel plan which will eventually require
n by PLMR users of narrowband or equivalent
t technology in the 150-174 MHz and 421-430,
512 MHz bands.

pect to licensing, the Commission stated in the
that it will begin the acceptance of
new 7.5 kHz channels in the VHF band, and for
in the UHF band, one (1) year from the
the Report and Order.[3] The Commission
lementing the narrowband channelization in this
it frequency coordinators sufficient opportunity
opriate procedures and separation guidelines
luate the applications for potential
ncumbent licensees.

ntly, LMCC requested, and the Commission
f the Report and Order to delay the acceptance
or the new 12.5 kHz channels in the UHF band.

Order, at paragraph 41.

III. COMMENTS

A. The Refarming Process, To This Point, Has Been Characterized By A Spirit of Cooperation Between the Commission and the Industry.

6. At this juncture, LMCC believes it is useful to place in perspective the process that has occurred, to date, in this proceeding with regard to technical issues. The proceedings have been characterized by a remarkable degree of cooperation and a careful melding of concepts by and between the Commission and industry. In the early days of refarming, the Commission's approach tended not to take full consideration of technical considerations. In many respects, the Notice of Proposed Rule Making[4] adopted in 1992 was also somewhat oblivious to fundamental implementation issues. The Notice proposed a variety of economic-based approaches that, to the extent they were plausible at all, were workable only on spectrum in which there was no entrenched use.

7. Over time, through a most welcome dialogue between the FCC and the industry, the Commission crafted a Report and Order that reflected many of the licensees' concerns and was properly aggressive with respect to the conversion to narrower channelization. When the industry identified potential difficulties in the implementation process, the Commission acted

---

[4] Notice of Proposed Rule Making, PR Docket No. 92-235, adopted October 8, 1992, 7 FCC Rcd. 8105 (1992).

quickly. It adopted, first, a Public Notice that halted, temporarily, the licensing of new high-powered stations on 12.5 kHz offset channels in the 450-470 MHz band.[5] Second, at the request of LMCC, it expanded the freeze to include all newly created channels that are 12.5 kHz removed from any frequency available in the 421-430 MHz and 470-512 MHz bands under the former rules.[6]

8. LMCC convened two task groups to work through the issues raised in the Commission's Report and Order and Further Notice of Proposed Rule Making. Through a series of meetings, the members of LMCC attempted to develop a consensus position on the highly interrelated issues raised in the Further Notice portion of the decision. As explained more fully below, the most difficult task facing LMCC was not the forging of a consensus: it was developing as rational, systematic program for a migration to narrower channelization technologies that would adequately protect the interests of the thousands of licensed users currently operating in these bands.

9. The industry understands the pressure facing the Commission, in its role as spectrum manager, to "promote more efficient and effective use of the PLMR bands below 800 MHz."[7]

---

[5] Public Notice, DA 95-1771, adopted August 11, 1995.

[6] Public Notice, DA 95-1839, adopted August 22, 1995.

[7] Further Notice of Proposed Rule Making, paragraph 110.

The Commission understands the difficulties posed by the existing environment, "characterized by unlimited sharing of the spectrum by over 500,000 licensees with over 12 million mobile units."[8] Further, while the FCC clearly seeks additional opportunities to employ spectrum auctions, there has been a recognition that the spectrum at issue in the refarming proceeding does not represent a useful environment for competitive bidding.

10. In the continued spirit of cooperation, and in an effort to fulfill the commitments made by the industry when it asked the FCC to stay the licensing of the newly created channels in the 421-430 MHz and 470-512 MHz bands,[9] the Land Mobile Communications Council respectfully files its Comments responsive to the issues raised in the Further Notice of Proposed Rule Making.

11. The express intent of the Further Notice is to explore "methods to promote more efficient and effective use of the PLMR bands below 800 MHz."[10] To accomplish this objective, the Commission seeks to make sure that "the current shared regulatory environment contains the proper incentives to encourage efficient

---

[8] Further Notice of Proposed Rule Making, paragraph 111.

[9] The stay, the Commission noted, would afford "the land mobile community additional time to develop standards for 12.5 kHz offset channels in the 421-430 MHz and 470-512 MHz UHF bands." Public Notice, DA 95-1839, at 2.

[10] Further Notice, paragraph 110.

spectrum usage."[11] The Commission believes that introducing market-based incentives into the frequency bands below 800 MHz will help to encourage more efficient spectrum use.

12. LMCC agrees with the Commission that encouraging more efficient and effective spectrum use remains the central focus of the refarming proceeding. LMCC respectfully submits, however, that, before the FCC reaches the stage of considering the possible benefits of market-based incentives, it address and resolve some residual technical and deployment issues. LMCC believes that various aspects of the Report and Order set a fertile foundation for more efficient and effective spectrum use. However, even with the question of the appropriate channel spacing for the refarmed spectrum having been settled, the process of transforming this spectrum from 25 kHz channels to 12.5 kHz and, ultimately, 6.25 kHz channels promises to be a most delicate transition. LMCC has developed an approach, set forth below, that it believes will advance significantly the success of the transition process.

B. Critical Steps Remain to be Completed to Ensure Successful Implementation of the Private Land Mobile Refarming Proceeding.

13. There are three significant steps that LMCC believes must be completed if the Commission and the industry are to

---

[11] Id.

achieve success in its refarming effort:

- Uniform technical guidelines must be developed that will permit the frequency coordinators to coordinate 25 kHz Time Division Multiple Access ("TDMA") systems, or other spectrally efficient wideband technologies, as well as 6.25 kHz and 12.5 kHz analog and digital systems in the existing environment.

- Measures must be implemented to allow the re-licensing of existing low power offset operations in the 450-470 MHz band for primary operations to adequately protect their communications systems from full power systems.

- Given the difficulty of implementing narrower channel equipment in an environment that relies solely on economic and operational "inducements," deadlines must be established to compel the transition to more efficient technologies.

14. LMCC believes it is imperative that the existing transition plan be further refined before the Commission proceeds with any sort of economic incentives. A simple example suffices to illustrate the difficulty of relying on economic incentives in frequencies bands that are already packed with users. To ensure a useful level of improvement in spectrum efficiency, the conversion to narrower channels must be an orchestrated phenomenon.

15. If an existing licensee of a 25 kHz system elects to convert to 12.5 kHz operations, the licensee's new channel spacing will utilize the same center frequency as the existing transmitter. The portion of the 25 kHz channel that is "freed up" comes in two segments of 6.25 kHz each that are located at the opposite edges of the 25 kHz channel. The 6.25 kHz segments